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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1621	
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01/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,801	VERSER ET AL.	
	Examiner	Art Unit	
	Lalitha Nagubandi	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/24/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Status of the Claims

1. Claims 1-20 are pending. Claims 1- 20 are considered for examination in this office action.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is requested in correcting any errors of which applicant may become aware of in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims **1-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Eyal et al (US Pat. 5,766,439 dated June 16th, 1998) and Ponnampalam et al (**US Pat. 6,284,904 B1**) and further in view of Zapp et al (Zapp, K.H., Wostbrock, K.H., Sato, K., Zwick,W., Mayer, D., "Ammonium Compounds" in Ullmann's Encyclopedia of Industrial Chemistry, 6th ed., Vol. A2,p.6 and 7).

3. Applicants claim a method for production of an organic acid and ammonium nitrate comprising:

(a) reacting a cation/ organic acid salt in a solution with nitric acid to acidify the organic acid and form a salt of the cation and nitrate, wherein the cation can form an insoluble carbonate salt;

(b) recovering the organic acid from the solution and

(c) reacting the cation/nitrate salt with ammonium carbonate to form ammonium nitrate and an insoluble carbonate salt.

The process claims that the organic acid salt is produced by fermentation in a fermentation medium and the process uses an ion exchange resin and the step of recovering is selected from the group consisting of distillation, extraction, crystallization as embodied in the claims.

Further, the claims embody processing of the ammonium nitrate into a fertilizer product.

Determination of the scope and content of prior art

Eyal et al teach a method for production of organic acids including the steps of producing organic acids like lactic acid by fermentation, neutralization with carbonate salt and reaction with ammonium carbonate (see abstract and col. 3,4,7 and 8).

Ponnampalam et al teach the process of purification of organic acids using anion exchange resin. The release of the free acid from the resin is conducted by using strong acids like sulfuric acid, *nitric acid*, phosphoric acid etc. The process also teaches further separation and purification of the organic acids by crystallization. (see col. 3, 4 and 5 and also the claims).

Zapp et al teach the process of making ammonium nitrate and further utilizing it as a fertilizer (see pages 6 ,7 and 10). The cation/nitrate salt is treated with ammonia and carbon dioxide to form calcium carbonate and ammonium nitrate.

Ascertainment of difference between the prior art and the claims

The difference between the prior art and in the instant claims is that Eyal teaches the production of organic acids as embodied in the claims by the fermentation process and by using

the ion exchange resin. However, the prior art does not explicitly teach the step of acidifying the salt of organic acid using nitric acid.

Ponnampalam while teaching the purification of organic acids using anion exchange resins does not explicitly teach the conversion of cation/nitrate salt to ammonium nitrate which is eventually processed as a fertilizer product by the instant claims.

Zapp teaches the formation of ammonium nitrate and its use as a fertilizer product but does not teach the production of organic acids derived from the fermentation process or the use of the ion exchange resin.

Finding of prima facie obviousness-rationale and motivation

The examiner contends that it would have been obvious to have used the nitric acid in the process of Eyal et al as the process leads to same products. Moreover, by combining the teachings of Ponnampalam and Zapp one of ordinary skill in the art would obviously use more viable acid like nitric acid in the regeneration of the resin as well as in economics point of view to generate a fertilizer end product leading to cost effective process.

In the instant case it is well within the scope of a skilled artisan to combine the teachings taught by Zapp in the process of Ponnampalam with a reasonable expectation of success of using the ammonium carbonate to convert the nitrate to ammonium nitrate and calcium carbonate and use the same principle in Eyal's process for producing the desired organic acids.

It is a routine practice in the field of process chemistry to alter the nature of the acids specifically in the instant case, based on cost efficiency and availability of the raw materials and as an effort towards improvement of a process , an ordinary artisan would have had a reasonable expectation of success to obtain the instant products as embodied in the instant claims.

Conclusion

4. *No claims are allowed*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lalitha Nagubandi whose telephone number is 571 272 7996.

The examiner can normally be reached on 6.30am to 3.30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne, Eyler can be reached on 571 272 0871.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lalitha Nagubandi
Patent Examiner
Technology Center 1600
December 28th, 2007.

J. PARSA
PRIMARY EXAMINER

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